

AMENDMENTS TO THE CLAIMS

1. (Original) A method of determining $E_{\log D_{\text{Oct}}}$ for chemical compounds which comprises:

a. Introducing said chemical compounds serially to the column of a reverse phase high performance liquid chromatographic system said column being an embedded amide functional group column; or a C-18 bonded column with low silanol activity; and

b. Eluting said compounds with a mobile phase containing MOPS buffer and a methanol/octanol mixture in which the proportions of said methanol/octanol mixture to said buffer are from 75 to 15% v/v; and with flow rates between 0.5 and 3 ml/min and

c. Measuring the retention time required to elute each sample from said column; and

d. Calculating $E_{\log D_{\text{Oct}}}$ from the retention time of each sample using equation 1: $\log D_{\text{Oct}} = 1.1267 (\pm 0.0233) \log k'_w + 0.2075 (\pm 0.0430)$ (Eq. 1).

2. (Original) The method of claim 1 wherein said compounds for which $E_{\log D_{\text{Oct}}}$ is to be determined are divided into groups according to calculated lipophilicity based on chemical structure and; $E_{\log D_{\text{Oct}}}$ is determined for all samples in a first group and; said column is equilibrated to the conditions for a second group.

3. (Original) The method of claim 1 wherein each of steps a) through d) is performed by robotic means under the control of a programmed computer.

4. (Original) The method of claim 1 wherein said column is an embedded amide functional group column.

5. (Original) The method of claim 1 wherein said column is a C-18 bonded column with low silanol activity.

6. (Original) The method of claim 1 wherein the buffer pH is between 4 and 8.

7. (New) The method of Claim 1 wherein said mobile phase further includes the addition of about 0.15% of n-decylamine.

8. (New) The method of Claim 4 wherein said mobile phase further includes the addition of about 0.15% of n-decylamine.

9. (New) The method of Claim 5 wherein said mobile phase further includes the addition of about 0.15% of n-decylamine.